

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
15 April 2004 (15.04.2004)

PCT

(10) International Publication Number  
WO 2004/031086 A1

(51) International Patent Classification<sup>7</sup>: C03C 4/00,  
A61L 27/10, 27/30

YLI-URPO, Antti [FI/FI]; Värttinäkatu 17, FIN-20660  
Littainen (FI). HUPA, Mikko [FI/FI]; Rakuunatie 47, FIN-  
20720 Turku (FI).

(21) International Application Number:  
PCT/FI2003/000715

(74) Agent: TURUN PATENTTITOIMISTO OY; P.O. Box  
99, FIN-20521 Turku (FI).

(22) International Filing Date: 2 October 2003 (02.10.2003)

(25) Filing Language: English

(81) Designated States (*national*): AE, AG, AL, AM, AT (util-  
ity model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA,  
CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (util-  
ity model), DE, DK (utility model), DK, DM, DZ, EC, EE  
(utility model), EE, EG, ES, FI (utility model), FI, GB, GD,  
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,  
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,  
MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT (utility  
model), PT, RO, RU, SC, SD, SE, SG, SK (utility model),  
SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,  
VC, VN, YU, ZA, ZM, ZW.

(26) Publication Language: English

(30) Priority Data:  
02079105.9 3 October 2002 (03.10.2002) EP  
60/415,820 4 October 2002 (04.10.2002) US

(71) Applicant (*for all designated States except US*):  
VIVOXID OY [FI/FI]; Tykistökatu 4 A, FIN-20520  
Turku (FI).

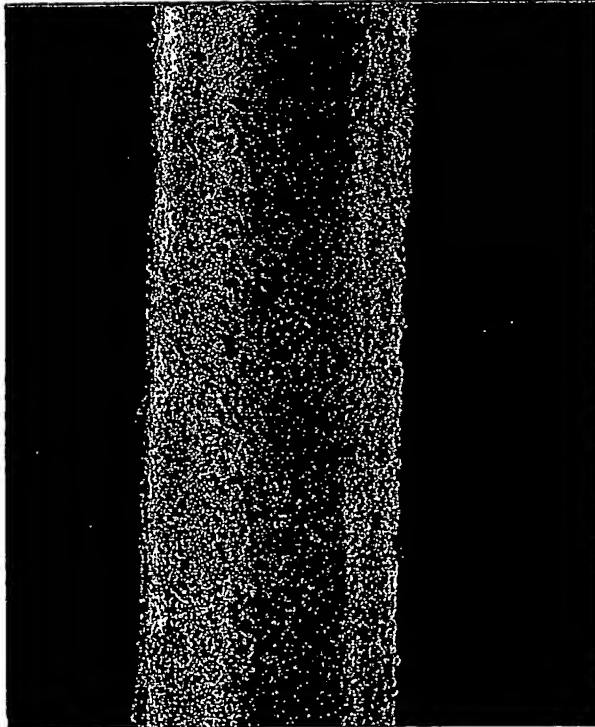
(72) Inventors; and

(75) Inventors/Applicants (*for US only*): YLÄNEN, Helmo  
[FI/FI]; Kunnallissairaalan tie 64, FIN-20810 Turku (FI).

(84) Designated States (*regional*): ARIPO utility model (GH),  
ARIPO patent (GH), ARIPO utility model (GM), ARIPO

[Continued on next page]

(54) Title: COMPOSITION, USE AND MANUFACTURE OF BIOACTIVE GLASS



(57) Abstract: The invention relates to a bioac-  
tive glass composition comprising SiO<sub>2</sub>, Na<sub>2</sub>O,  
CaO, K<sub>2</sub>O, MgO, P<sub>2</sub>O<sub>5</sub> and B<sub>2</sub>O<sub>3</sub>. According to  
the invention, the amount of SiO<sub>2</sub> is 51-56 wt-%  
of the starting oxides, Na<sub>2</sub>O is 7-9 wt-% of the  
starting oxides, CaO is 21-23 wt-% of the start-  
ing oxides, K<sub>2</sub>O is 10-12 wt-% of the starting  
oxides, MgO is 1-4 wt-% of the starting oxides,  
P<sub>2</sub>O<sub>5</sub> is 0,5-1,5 wt-% of the starting oxides, B<sub>2</sub>O<sub>3</sub>  
is 0-1 wt-% of the starting oxides, provided that  
the total amount of Na<sub>2</sub>O and K<sub>2</sub>O is 17-20 wt-%  
of the starting oxides. The invention further re-  
lates to the use of said bioactive glass compo-  
sition and the manufacturing of said bioactive  
glass composition.

WO 2004/031086 A1



patent (GM), ARIPO utility model (KE), ARIPO patent (KE), ARIPO utility model (LS), ARIPO patent (LS), ARIPO utility model (MW), ARIPO patent (MW), ARIPO utility model (MZ), ARIPO patent (MZ), ARIPO utility model (SD), ARIPO patent (SD), ARIPO utility model (SL), ARIPO patent (SL), ARIPO utility model (SZ), ARIPO patent (SZ), ARIPO utility model (TZ), ARIPO patent (TZ), ARIPO utility model (UG), ARIPO patent (UG), ARIPO utility model (ZM), ARIPO patent (ZM), ARIPO utility model (ZW), ARIPO patent (ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,

FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*